

FIG. 1

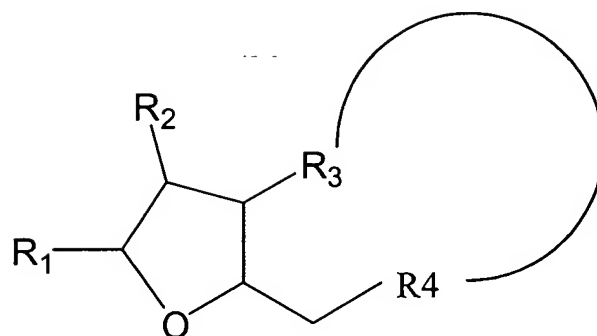
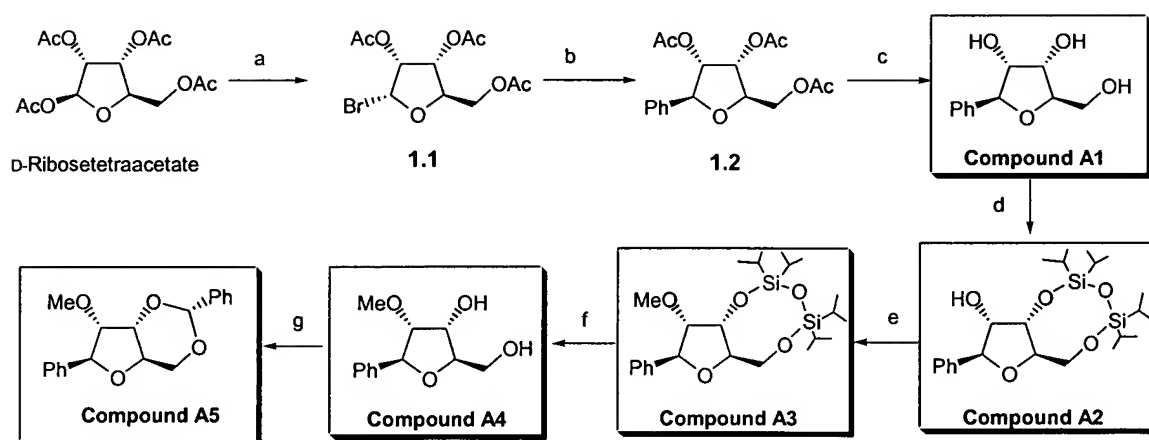
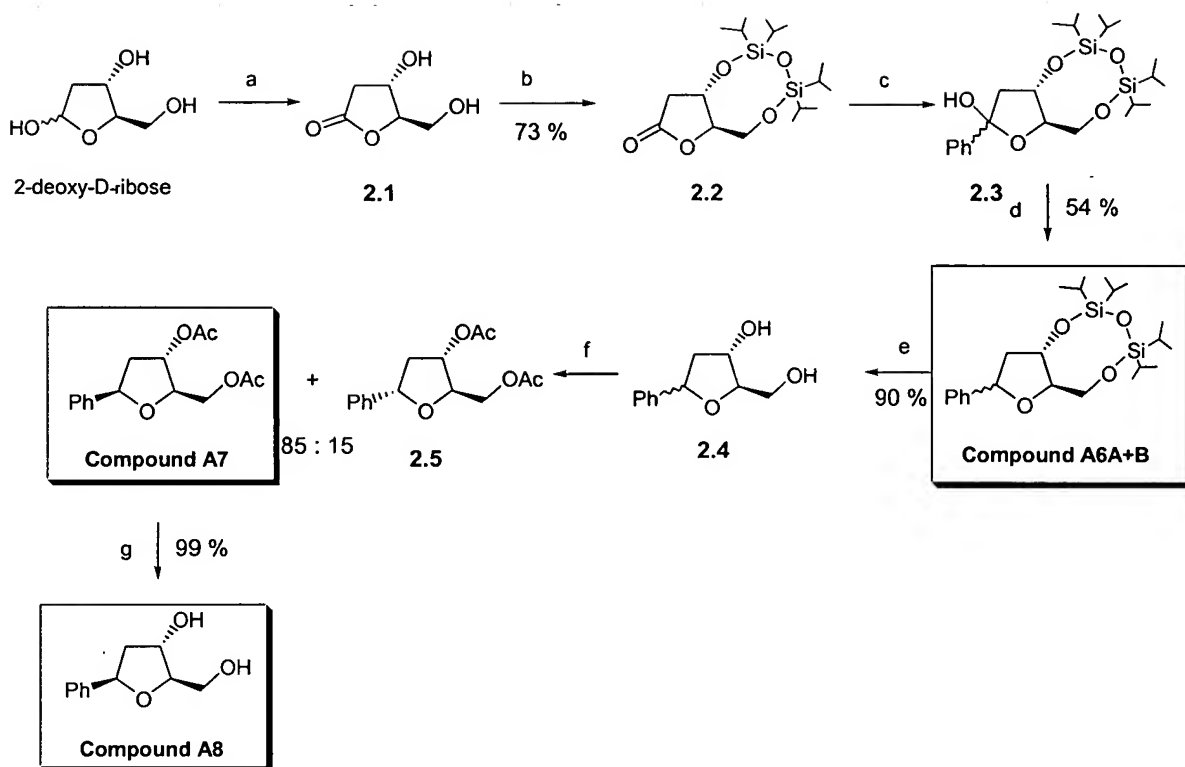


FIG. 2



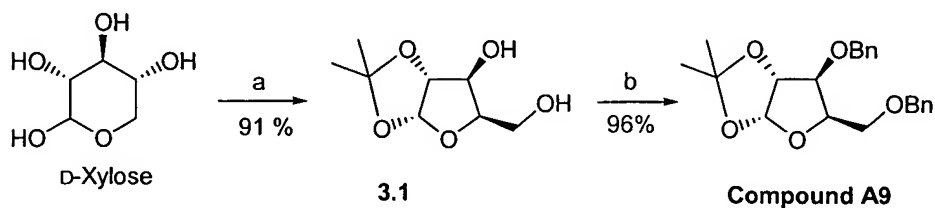
a) HBr, HOAc, RT ; b) (i) phenylmagnesium bromide, diethylether, 0°C to RT; (ii) Ac<sub>2</sub>O, pyridine, RT; c) K<sub>2</sub>CO<sub>3</sub>, MeOH/THF (1:1), RT; d) 1,3-dichloro-1,1,3,3-tetraisopropyldisiloxane, pyridine, RT; e) Ag<sub>2</sub>O, MeI, reflux; f) Bu<sub>4</sub>NF, THF, RT; g) PhCHBr<sub>2</sub>, pyridine

FIG. 3



a)  $\text{Br}_2$ ,  $\text{H}_2\text{O}$ , RT; b)  $\text{TIPDSCl}_2$ , imidazole, DMF, RT, 24h; c)  $\text{PhLi}$ , THF,  $-78^\circ\text{C}$ , 1h; d)  $\text{Et}_3\text{SiH}$ ,  $\text{BF}_3 \cdot \text{Et}_2\text{O}$ ,  $\text{CH}_2\text{Cl}_2$ ,  $-78^\circ\text{C}$ , 4h; e) TBAF, THF, RT, 2h; f)  $\text{AC}_2\text{O}$ , pyr, DMAP, 14 h, RT, column chromatography; g)  $\text{K}_2\text{CO}_3$ , MeOH, THF, RT, 5h

FIG. 4



a) (i) acetone,  $\text{CuSO}_4 \cdot \text{anh}$ ,  $\text{H}_2\text{SO}_4$ , 24h, RT; (ii) 0.1 M HCl-sol., MeOH, 4h,  $40^\circ\text{C}$ ; b) (i)  $\text{NaH}$ , DMF, 30 min,  $0^\circ\text{C}$ ; (ii)  $\text{BnBr}$ , overnight, RT